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GB 2052878 A GB 1228231 A EP 0577433 A2

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UK CL (Edition M) A4B , A4L LACD LSB , H1R RBU
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(54) Mounting frame for electrical equipment

(57) The invention concerns with a mounting frame for an appliance cabinet provided with enclosure panels and serving for the mounting of sub-racks used in industrial electronics. Four posts 3 extend between a lower plinth 1 and a identically formed cover plate 2. Front arms 10 and rear arms 12 project at the plinth 1 and cover plate 2 for securing the enclosure panels, the arms being aligned with each other and forming recesses 10' and 12' for cable harnesses.

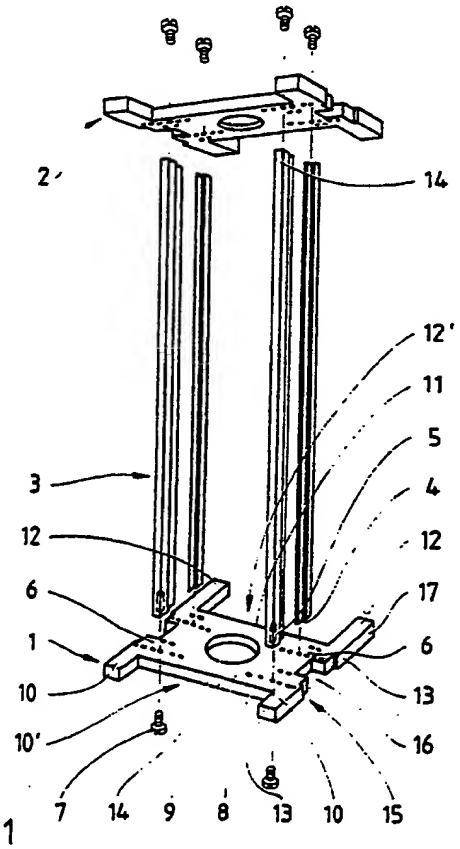

Fig. 1

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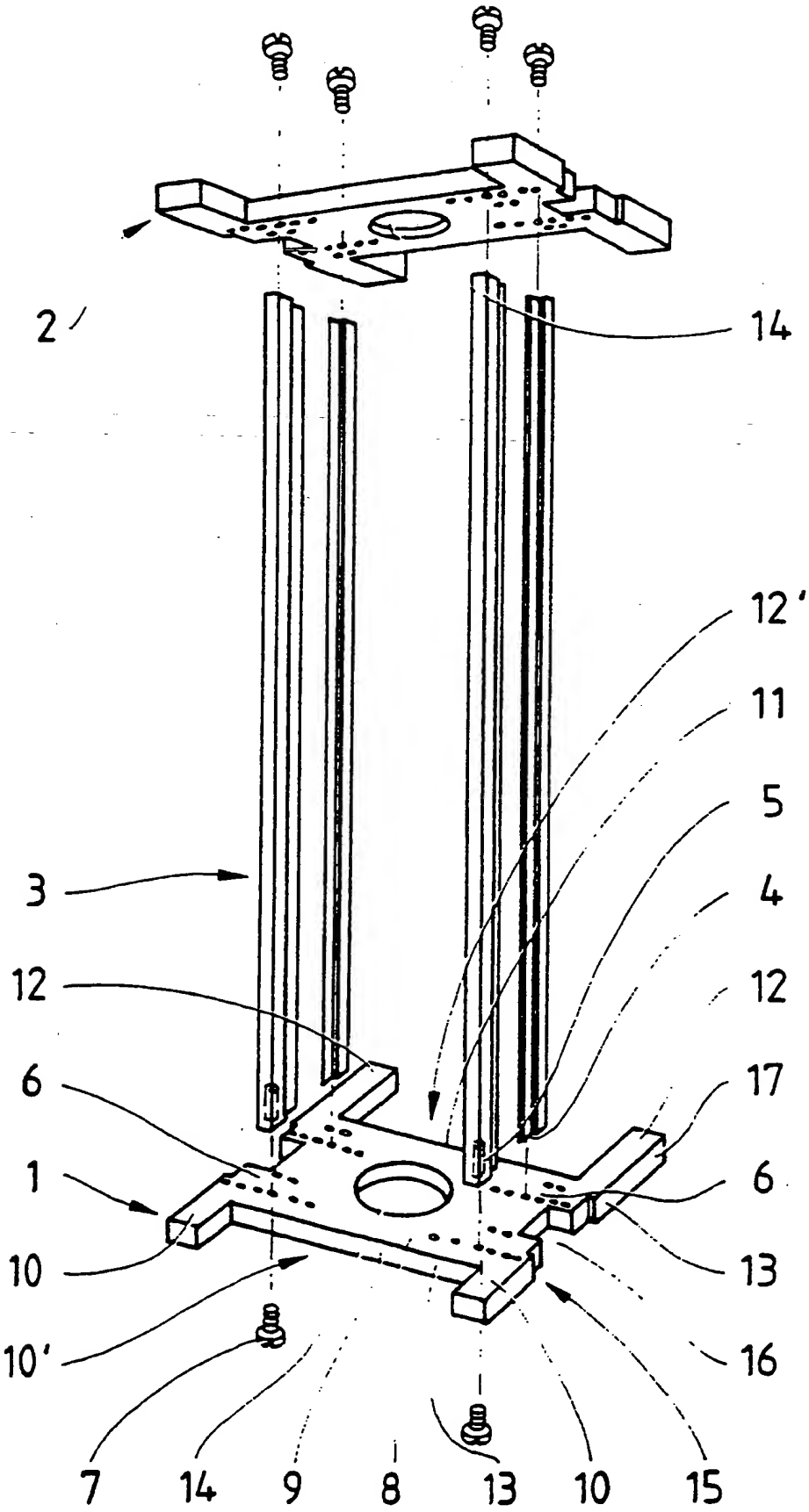

Fig. 1

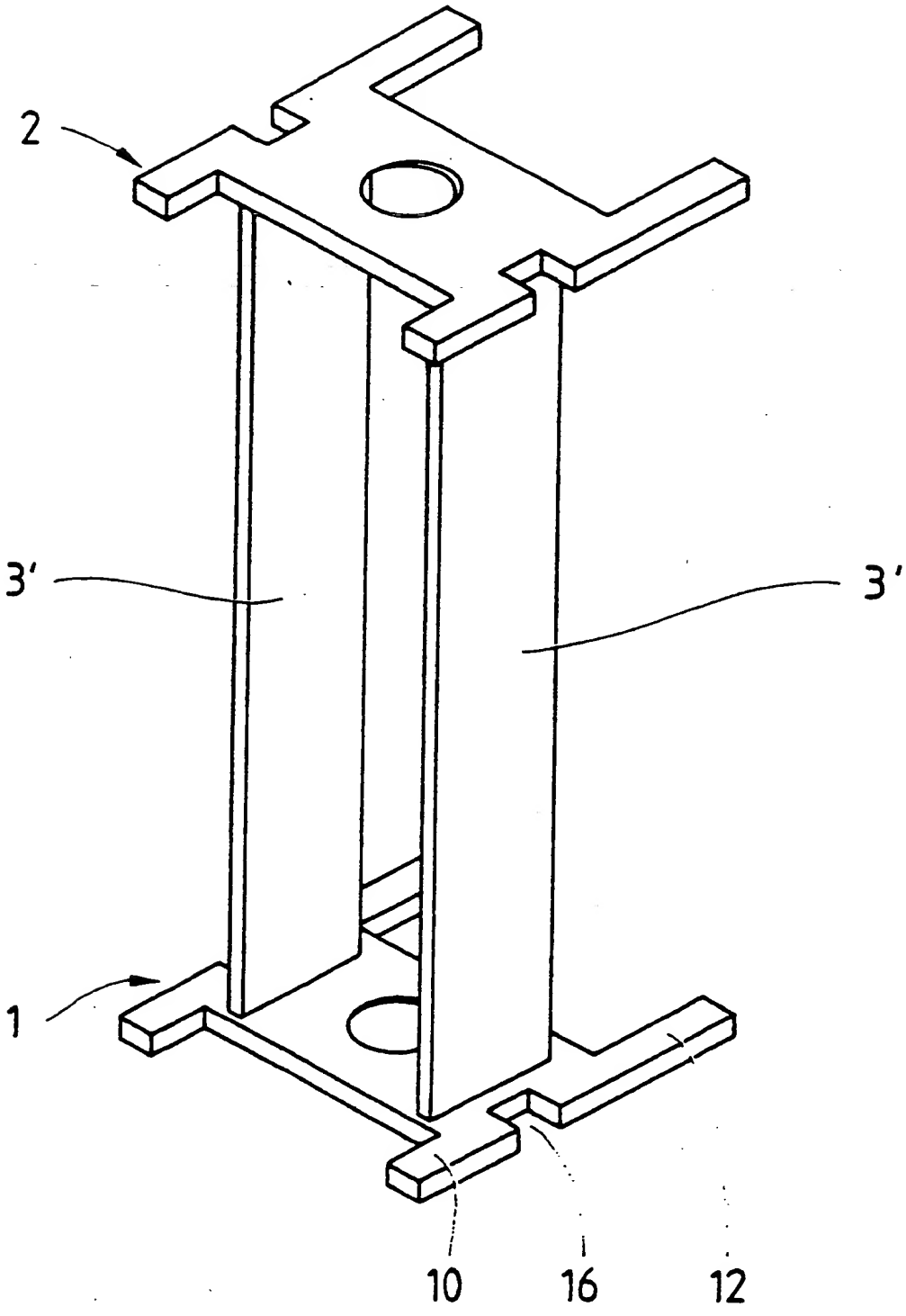

Fig. 2

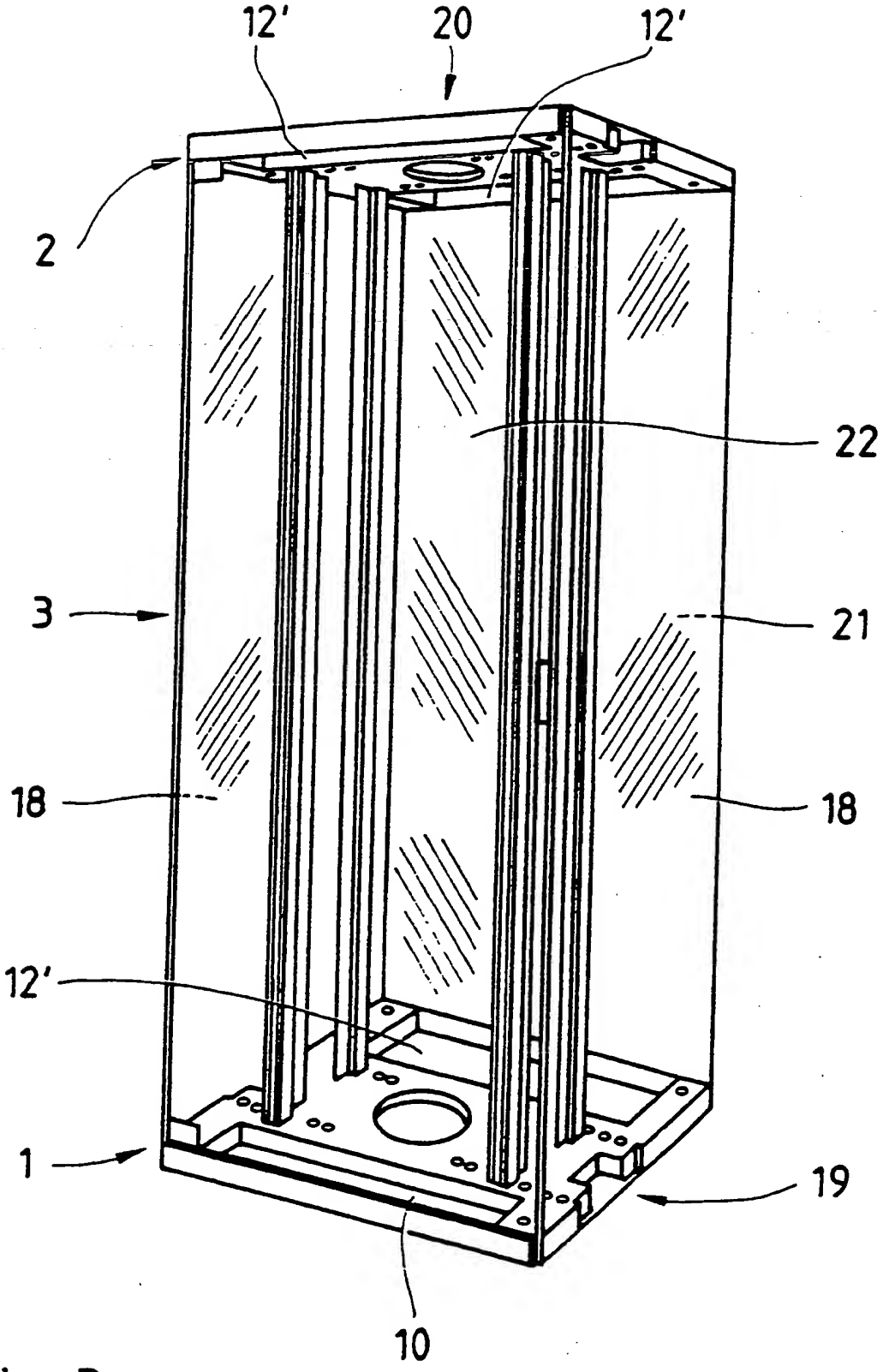

Fig. 3

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The invention concerns a mounting frame or rack for an appliance cabinet serving for mounting subracks in industrial electronics and provided with enclosure members.

The proposed mounting frame finds use for appliance cabinets for receiving electrical, electronic and opto-electronic components in connection with the erection and operation of local networks wherein large thicknesses of cabling, utilising cables of larger diameter, are employed.

Mounting frames for appliance cabinets for industrial electronics are known, in which subracks with electronic and electric components together with a wiring backplane, the peripheral termination panel, the fans and other accessories are accommodated. Such frames have a floor and a cover in the form of torsionally stiff horizontal frames consisting of four bars which are connected through four vertical posts. The components are secured between the posts. To form the closed appliance cabinet enclosure (fairing) members are directly secured on the mounting frame on all sides in the form of side walls, rear wall, a floor plate, a lid plate as well as a door. Since only a few conductors are required for the external cabling of the built-in electric and electronic components, there are no difficulties in threading the relatively thin strands of cable into the housing and in guiding them inwardly through small openings or special through-bores.

The known mounting frames are not suitable for appliance cabinets where large amounts of cabling are to be arranged and distributed and where cables of larger diameter and thus lower flexibility are concerned. Local networks (LANs) require free access for many cables of differing sizes in the region of mounting the electrical and electronic components as well as the distributor plates (patch panels) in the appliance cabinet. Stiff cables cannot be threaded into appliance cabinets constructed from known racks and to be laid out in their interiors. This is where the invention comes in.

The task to be solved by the invention consists in so constructing a mounting frame or rack for appliance cabinets of industrial electronics that all requirements for the unhindered supply of a

large number of cable strands of low flexibility can be fulfilled in the region of mounting of the electric/electronic elements.

For the solution of the set task one starts from a mounting frame of the conventional type of construction. The task is solved in a mounting frame which has the following features: a lower plinth, an upper cover plate, parallel posts of equal length extending between the plinth and the cover plate, the frontal surfaces of the posts on two sides having securing bores, the plinth and the cover plate carrying groups of securing holes, the plinth and the cover plate being rigidly connected with the posts by means of securing screws which project through the securing holes and engage in the securing bores, the plinth and the cover plate being formed essentially of a securing plate having a rectangular contour which carries the groups of securing holes, on one of the longitudinal sides of the plinth and of the cover plate two front arms project perpendicularly forwardly and form a front recess between themselves, at the opposite longitudinal sides of the plinth and of the cover plate two rear arms project perpendicularly out and form a rear recess between themselves, the front and rear flanges are being formed on the ends of the longitudinal sides, each of a front and a rear arm being aligned with each other.

The essence of the invention is to be seen in particular in the formation of the plinth and the cover plate which make it possible to offset the carrier posts inwardly and to form at their longitudinal sides between the front and rear flanges wide and sufficiently deep recesses for cable harnesses which thus can be guided unhindered into the region of mounting of components. Here the mounting of cables may take place with the rack equipped with components and open. Only after finishing the assembly work are the enclosure members be secured to the flanges at a sufficient spacing from the devices that have been built in, so that the forming of the protective cabinet takes place *in situ* only after the last working operation . Within the groups of securing holes the post may be so arranged that the internal construction can correspond to various standards, such as eg. the 19-inch norm or the metric system.

Expediently four profiled rails serve as posts. These are so formed that the mounting appliances and other elements may be secured at any desired height.

In place of four posts two carrier walls which in side elevation are longitudinal and rectangular may be utilised and which stand opposite each other in a 19-inch or metric array.

Expediently for securing the posts or carrier walls two adjacently lying securing bores are provided at their end faces which also prevent a rotational displacement during or after assembly. The securing screws may be provided with a self-cutting thread.

To facilitate the mounting, the securing bores may in general be provided with internal threading for the securing screws.

In order to improve the cooling of the components set between the posts both the plinth and the cover plate have a respective ventilation opening. This is preferably circular so that axial fans may be inserted in a problem-free manner.

According to a further characteristic of the invention the plinth and the cover plate carry edge recesses at their narrower sides. These enable a direct application of cable harnesses to the components in the mounting frame, from the side.

Expediently the outer sides of the front and rear arms are so arranged that they or are aligned with the narrower sides of the plinth and the cover plate.

It is of particular advantage when the plinth and the cover plate are made of one piece and consist of aluminium die castings which brings with it a high torsional stiffness. However, both these parts may also be made of deep-drawn steel plate or of stamped parts secured together eg. by welding.

The two front arms of the plinth and of the cover plate may be formed significantly shorter than the respective rear arms. This measure takes into account the circumstance that at the front of the components to be mounted less room is required for cable supply than at the rear side.

For reasons of rational manufacture the plinth and the cover plate are advantageously formed identically. According to a further characteristic of the invention both the plinth and the cover plate have a peripherally extending marginal ledge.

Expediently the marginal ledge is formed everywhere of the same height and is essentially mounted perpendicularly at the plinth between the cover plate.

Enclosure members of the appliance cabinet are butted to the plinth and to the cover plate, the proposed mounting frame being the load carrying component of the appliance cabinet: the enclosure members are the two side panels, a single-part or multi-part floor panel, the cover panel, the rear wall or one or more pivoting doors.

The invention is described in greater detail below with reference to three sheets of drawings wherein:

Figure 1 is a mounting frame in a perspective exploded view, with four profiled rails as posts;

Figure 2 is a mounting frame with two carrier walls as posts, in perspective;

Figure 3 is an appliance cabinet formed with a mounting frame according to Figure 1 with its enclosure panels represented as if transparent.

The mounting frame or rack reproduced in Figure 1 which is provided as the carrier structure for an appliance cabinet for mounting sub-assembly carriers (subtracks) and other components of industrial electronics consists of a lower plinth 1, an upper cover plate 2 as well as four posts 3.

The plinth 1 and the cover plate 2 are formed of one piece, and they consist of an aluminium die casting: they are formed identically. The posts 3 concern profiled rails of extruded aluminium. The (non-illustrated) subracks may be inserted and secured at any desired height between these posts 3, and to this end the posts carry rows of holes or have T-shaped grooves for inserting threaded parts.

The four parallel posts 3 of equal length extend between the plinth 1 and the cover plate 2 and have four securing bores 5 at their two end faces. The lower plinth 1 and the upper cover plate 2 carry groups of securing holes 6. The plinth 1 and the cover plate 2 are rigidly secured with the four posts 3 by way of securing screws 7 which pass through the securing holes 6 of the plinth 1 and the cover plate 2 and engage in the securing bores 5 of the posts.

The plinth 1 and the cover plate 2 are each formed by a securing plate 8 with an essentially rectangular contour which carries groups of securing holes 6. The arrangement of the securing holes is such that the four posts can be secured to the plinth 1 and the cover plate 2 corresponding to the width and depth of the standardised sub-racks to be inserted.

At one (frontal) longitudinal side 9 of the plinth 1 and the cover plate 2 (or the securing plate 8) two front arms 10 project perpendicularly forwardly and the opposite (rear) longitudinal side 11 two (rear) flanges arms forwardly, perpendicularly to the longitudinal side 11. Both the two front arms 10 as well as the two rear arms 12 are so formed on the ends of longitudinal sides 9 and 11 of the securing plate 8 that a front arm 10 and a rear arm 12 are always aligned together and between them a front recess 10' or a rear recess 12' is formed. The plinth 1 and the cover plate 2 together with their respective four arms 10 and 12 display a contour which can be compared to a broad "H".

The plinth 1 and cover plate 2 have a respective peripherally extending marginal ledge 13 which is of equal height throughout and which is formed perpendicularly at the two longitudinal sides 9 and 11 as well as on all sides of the four arms 10 and 12. The plinth 1 and the cover plate 2 are formed as thin-walled members and represent downwardly and upwardly open, low H-shaped troughs. Stiffening ribs (not visible) are disposed within the troughs.

In place of the four posts 3, two parallel side walls 3' may also be provided between the plinth and cover plate 2 which in side elevation are longitudinally rectangular and stand opposite each other at a spacing from the components to be mounted, as is shown in Figure 2. These side walls 3' are formed as hollow profiles.

Both the plinth 1 and the cover plate 2 have a circular ventilation opening 14. In addition, on their narrower sides 15 the plinth 1 and cover plate 2 carry edge recesses 16 of rectangular contour. The outer sides 17 of the flanges 10 and 12 are in register with these narrower sides 15.

The two front arms 10 of the plinth 1 and cover plate 2 are shorter than the two rear arms 12.

Figure 3 represents an appliance cabinet for mounting sub-racks and other electrical and electronic components, the cabinet having a rack according to Figure 1 as the carrier element. The enclosure panels of this appliance cabinet, namely the side panel 18, the floor panel 19, the cover panel 20, the rear wall 21 as well as the door 22 are butted directly to the marginal ledges 13 of the plinth 1 and the cover plate 2, namely are secured or butted to their front and rear arms 10 and 12 or to their narrow sides 15. In this way wide recesses 10' and 12' are formed between the front and rear arms 10 and 12 as well as at the plinth 1 and the cover plate 2 which recesses together with the edge recesses 16, permit an unhinded introduction and laying out arrangement of very extensive cable harnesses from below, from above and from two sides to the sub-assemblies and components.

In the attached claims reference numbers have been used purely to facilitate comprehension but absolutely no limitation of scope is intended thereby.

There now follows a list of reference numbers and the associated components.

List of Reference Numbers

1	Plinth
2	Cover Plate
3	Post
4	End faces (of 3)
5	Securing bores
6	Securing holes (in 1 and 2)
7	Securing screws
8	Securing plate
9	Longitudinal side (front)
10	(Front) arm
11	Longitudinal side (rear)
12	(Rear) arm
10'	(Front) recess
12'	(Rear) recess
13	Marginal ledge
3'	Carrier walls
14	Ventilation opening
15	Narrow sides
16	Edge recesses
17	Outer sides
18	Side panels
19	Floor panel
20	Cover panel
21	Rear wall
22	Door

Claims

1. A mounting frame for an appliance cabinet, the cabinet serving for mounting sub-racks of the electronics industry and provided with enclosure panels, the frame having the following features:

- a lower plinth (1),
- an upper cover plate (2),
- parallel posts (3) of equal length extend between the plinth (1) and the cover plate (2),
- the frontal surfaces (4) of the posts (3) on two sides have securing bores (5),
- the plinth (1) and the cover plate (2) carry groups of securing holes (6),
- the plinth (1) and the cover plate (2) are rigidly connected with the posts by means of securing screws (7) which project through the securing holes (6) and engage in the securing bores (5),
- the plinth (1) and the cover plate (2) are formed essentially of a securing plate (8) having a rectangular contour which carries the groups of securing holes (6),
- on one of the longitudinal sides (9) of the plinth (1) and of the cover plate (2) two front arms (10) project perpendicularly forwardly and form a front recess (10) between themselves,
- at the opposite longitudinal sides (11) of the plinth (1) and of the cover plate (2) two rear arms (12) project perpendicularly out and form a rear recess (12') between themselves,
- the front and rear arms (10 and 12) are formed on the ends of the longitudinal sides (9 and 11),
- each of a front and a rear flange (10 or 12) are aligned with each other.

2. A mounting frame according to claim 1, characterised in that four profiled rails serve as posts (3).

3. A mounting frame according to claim 1, characterised in that two mutually oppositely standing carrier walls (3') of longitudinally rectangular side elevation serve as the posts (3).

4. A mounting frame according to any one of claims 1 to 3, characterised in that two securing walls (5) lying next to each other are provided at each end face (4) of the posts (3 or 3').

5. A mounting frame according to any one of claims 1 to 4 characterised in that the securing walls (5) are provided with internal threading for the securing screws (7).

6. A mounting frame according to one of claims 1 to 5, characterised in that the plinth (1) and the cover plate (2) are provided with a respective ventilation opening (14).

7. A mounting frame according to any one of claims 1 to 6, characterised in that the plinth and the cover plate have edge recesses (16) on their narrow sides (15).

8. A mounting frame according to claim 7, characterised in that the outer sides (17) of the front and rear arms (10 and 12) are aligned with the narrow sides (15) of the plinth (1) and the cover plate (2).

9. A mounting frame according to any one of claims 1 to 8, characterised in that the plinth (1) and the cover plate (2) are made of one piece and consist of aluminium die casting.

10. A mounting frame according to any one of claims 1 to 9, characterised in that the front arms (10) are formed shorter than the rear arms (12).

11. A mounting frame according to any one of claims 1 to 10, characterised in that the plinth (10) and the cover plate (12) are formed identically.

12. A mounting frame according to any one of claims 1 to 11, characterised in that the plinth (1) and the cover plate (2) have a circumferentially extending marginal ledge (13).

13. A mounting frame according to claim 12 characterised in that the marginal ledge (13) is formed with the same height throughout and is mounted essentially perpendicularly.

14. A mounting frame according to any one of claims 1 to 13, characterised in that the enclosure panels of the appliance cabinet in the form of side enclosure panels (18), floor enclosure panel (19), cover enclosure panel (20), rear wall (21) and door (22) are butted to the plinth (1) and to the cover plate (2).

15. A mounting frame substantially as herein described with reference to and as shown in the accompanying drawings.

Patents Act 1977
Examiner's report to the Comptroller under Section 17
(The Search report)

-12-

Application number
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Relevant Technical Fields

(i) UK Cl (Ed.M) A4L (LACD LSB); A4B; H1R (RBU)

(ii) Int Cl (Ed.5) A47B; H05K

Search Examiner
JOHN WILSON

Date of completion of Search
21 DECEMBER 1994

Databases (see below)
(i) UK Patent Office collections of GB, EP, WO and US patent specifications.

(ii)

Documents considered relevant following a search in respect of Claims :-
1 TO 15

Categories of documents

X: Document indicating lack of novelty or of inventive step.

Y: Document indicating lack of inventive step if combined with one or more other documents of the same category.

A: Document indicating technological background and/or state of the art.

P: Document published on or after the declared priority date but before the filing date of the present application.

E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.

&: Member of the same patent family; corresponding document.

Category	Identity of document and relevant passages		Relevant to claim(s)
A	GB 2052878 A	(SCHROFF) whole document	1 at least
A	GB 1228231	(STC) whole document	1 at least
A	EP 0577433 A2	(BICC) whole document	1 at least

Databases: The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).

(12) UK Patent (19) GB (11) 2 282 527 (13) B

(54) Title of Invention

Mounting frame

(51) INT CL[6]; **H05K 7/18**

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9419858.7

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(52) Domestic classification
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H1R RBU

(56) Documents cited
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(58) Field of search

As for published application 2282527 A *viz:*
UK CL(Edition M) **A4B, A4L LACD LSB, H1R RBU**
INT CL[5] **A47B, H05K**
updated as appropriate

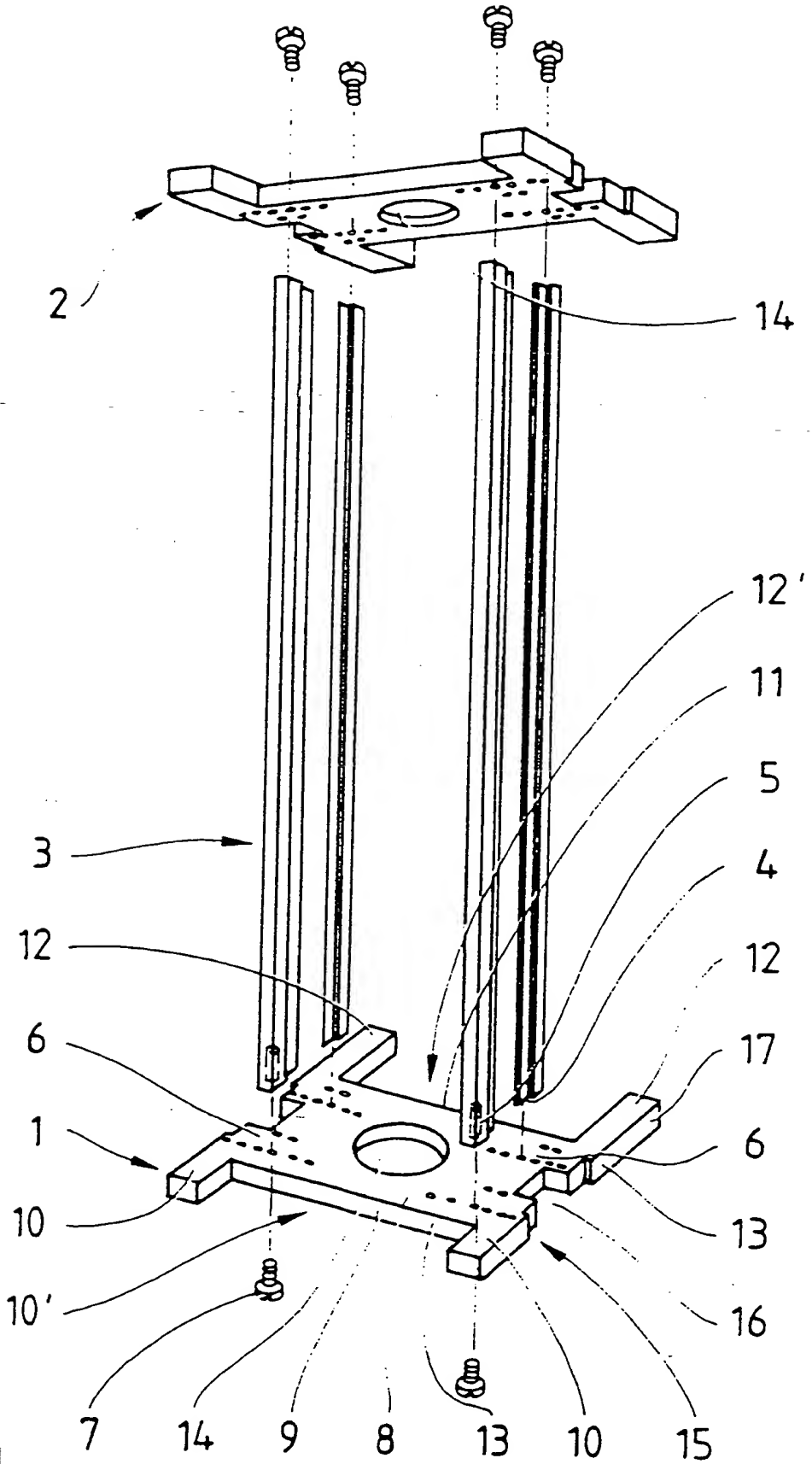

Fig. 1

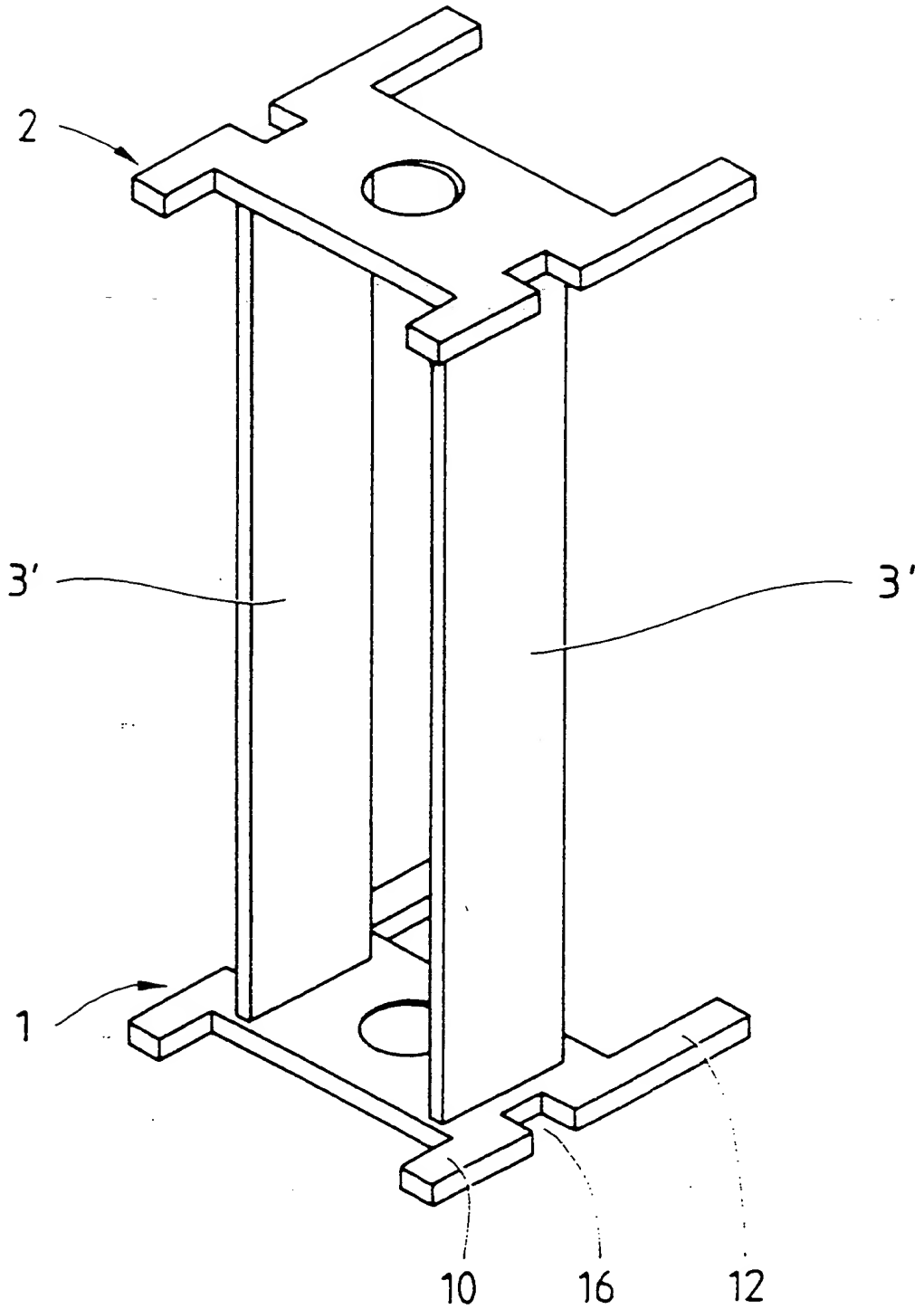

Fig. 2

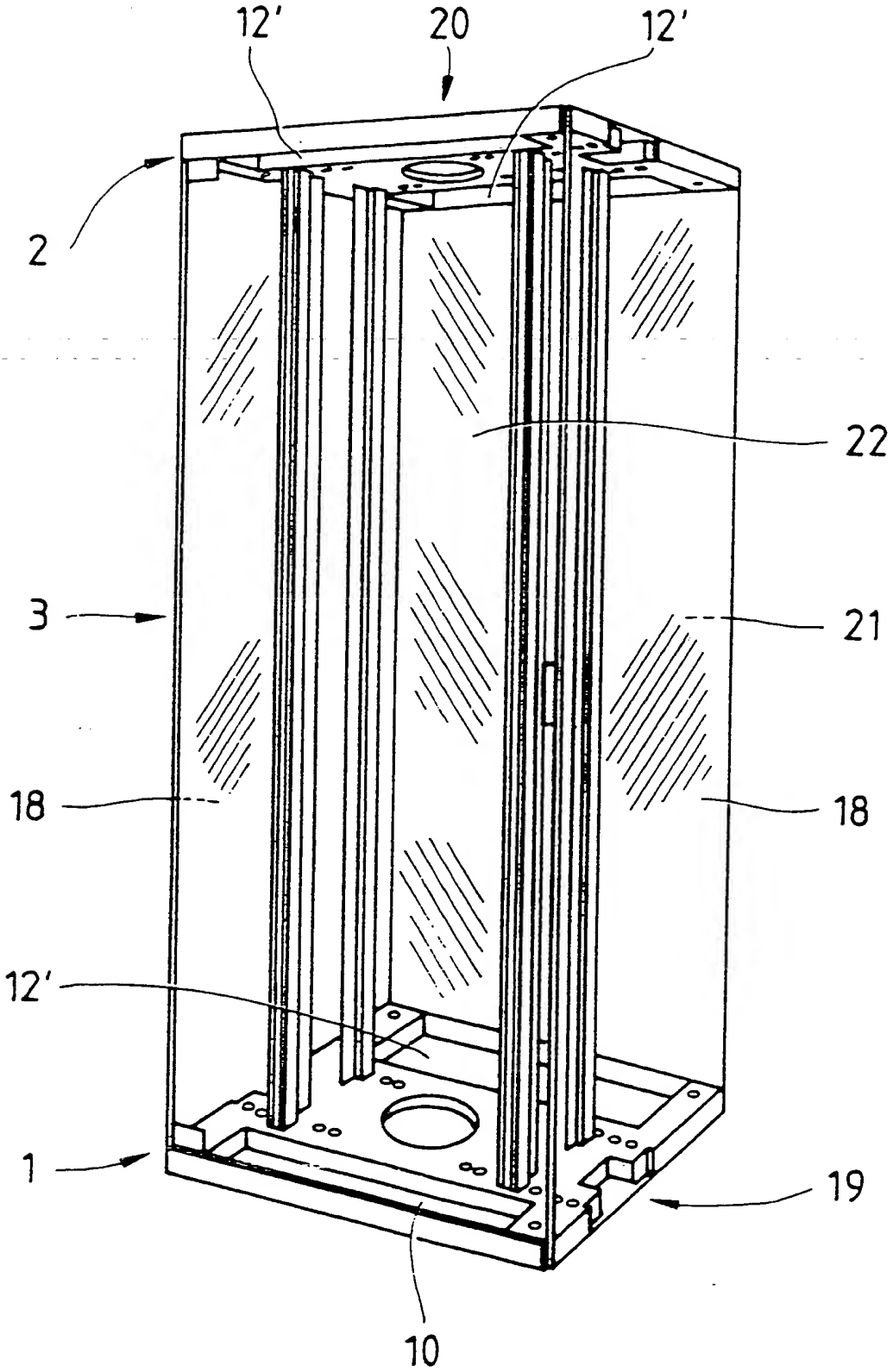

Fig. 3

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Mounting frame

The invention concerns a mounting frame or rack for an appliance cabinet serving for mounting subracks in industrial electronics and provided with enclosure members.

The proposed mounting frame finds use for appliance cabinets for receiving electrical, electronic and opto-electronic components in connection with the erection and operation of local networks wherein large thicknesses of cabling, utilising cables of larger diameter, are employed.

Mounting frames for appliance cabinets for industrial electronics are known, in which subracks with electronic and electric components together with a wiring backplane, the peripheral termination panel, the fans and other accessories are accommodated. Such frames have a floor and a cover in the form of torsionally stiff horizontal frames consisting of four bars which are connected through four vertical posts. The components are secured between the posts. To form the closed appliance cabinet enclosure (fairing) members are directly secured on the mounting frame on all sides in the form of side walls, rear wall, a floor plate, a lid plate as well as a door. Since only a few conductors are required for the external cabling of the built-in electric and electronic components, there are no difficulties in threading the relatively thin strands of cable into the housing and in guiding them inwardly through small openings or special through-bores.

The known mounting frames are not suitable for appliance cabinets where large amounts of cabling are to be arranged and distributed and where cables of larger diameter and thus lower flexibility are concerned. Local networks (LANs) require free access for many cables of differing sizes in the region of mounting the electrical and electronic components as well as the distributor plates (patch-panels) in the appliance cabinet. Stiff cables cannot be threaded into appliance cabinets constructed from known racks and to be laid out in their interiors. This is where the invention comes in.

The task to be solved by the invention consists in so constructing a mounting frame or rack for appliance cabinets of industrial electronics that all requirements for the unhindered supply of a

large number of cable strands of low flexibility can be fulfilled in the region of mounting of the electric/electronic elements.

For the solution of the set task one starts from a mounting frame of the conventional type of construction. The task is solved in a mounting frame which has the following features: a lower plinth, an upper cover plate, parallel posts of equal length extending between the plinth and the cover plate, the frontal surfaces of the posts on two sides having securing bores, the plinth and the cover plate carrying groups of securing holes, the plinth and the cover plate being rigidly connected with the posts by means of securing screws which project through the securing holes and engage in the securing bores, the plinth and the cover plate being formed essentially of a securing plate having a rectangular contour which carries the groups of securing holes, on one of the longitudinal sides of the plinth and of the cover plate two front arms project perpendicularly forwardly and form a front recess between themselves, at the opposite longitudinal sides of the plinth and of the cover plate two rear arms project perpendicularly out and form a rear recess between themselves, the front and rear flanges are being formed on the ends of the longitudinal sides, each of a front and a rear arm being aligned with each other.

The essence of the invention is to be seen in particular in the formation of the plinth and the cover plate which make it possible to offset the carrier posts inwardly and to form at their longitudinal sides between the front and rear flanges wide and sufficiently deep recesses for cable harnesses which thus can be guided unhindered into the region of mounting of components. Here the mounting of cables may take place with the rack equipped with components and open. Only after finishing the assembly work are the enclosure members be secured to the flanges at a sufficient spacing from the devices that have been built in, so that the forming of the protective cabinet takes place *in situ* only after the last working operation . Within the groups of securing holes the post may be so arranged that the internal construction can correspond to various standards, such as eg. the 19-inch norm or the metric system.

Expediently four profiled rails serve as posts. These are so formed that the mounting appliances and other elements may be secured at any desired height.

In place of four posts two carrier walls which in side elevation are longitudinal and rectangular may be utilised and which stand opposite each other in a 19-inch or metric array.

Expediently for securing the posts or carrier walls two adjacently lying securing bores are provided at their end faces which also prevent a rotational displacement during or after assembly.. The securing screws may be provided with a self-cutting thread.

To facilitate the mounting, the securing bores may in general be provided with internal threading for the securing screws.

In order to improve the cooling of the components set between the posts both the plinth and the cover plate have a respective ventilation opening. This is preferably circular so that axial fans may be inserted in a problem-free manner.

According to a further characteristic of the invention the plinth and the cover plate carry edge recesses at their narrower sides. These enable a direct application of cable harnesses to the components in the mounting frame, from the side.

Expediently the outer sides of the front and rear arms are so arranged that they ~~be~~ are aligned with the narrower sides of the plinth and the cover plate.

It is of particular advantage when the plinth and the cover plate are made of one piece and consist of aluminium die castings which brings with it a high torsional stiffness. However, both these parts may also be made of deep-drawn steel plate or of stamped parts secured together eg. by welding.

The two front arms of the plinth and of the cover plate may be formed significantly shorter than the respective rear arms. This measure takes into account the circumstance that at the front of the components to be mounted less room is required for cable supply than at the rear side.

For reasons of rational manufacture the plinth and the cover plate are advantageously formed identically. According to a further characteristic of the invention both the plinth and the cover plate have a peripherally extending marginal ledge.

Expediently the marginal ledge is formed everywhere of the same height and is essentially mounted perpendicularly at the plinth between the cover plate.

Enclosure members of the appliance cabinet are butted to the plinth and to the cover plate, the proposed mounting frame being the load carrying component of the appliance cabinet: the enclosure members are the two side panels, a single-part or multi-part floor panel, the cover panel, the rear wall or one or more pivoting doors.

The invention is described in greater detail below with reference to three sheets of drawings wherein:

Figure 1 is a mounting frame in a perspective exploded view, with four profiled rails as posts;

Figure 2 is a mounting frame with two carrier walls as posts, in perspective;

Figure 3 is an appliance cabinet formed with a mounting frame according to Figure 1 with its enclosure panels represented as if transparent.

The mounting frame or rack reproduced in Figure 1 which is provided as the carrier structure for an appliance cabinet for mounting sub-assembly carriers (~~subracks~~ Subracks) and other components of industrial electronics consists of a lower plinth 1, an upper cover plate 2 as well as four posts 3.

The plinth 1 and the cover plate 2 are formed of one piece, and they consist of an aluminium die casting: they are formed identically. The posts 3 concern profiled rails of extruded aluminium. The (non-illustrated) subracks may be inserted and secured at any desired height between these posts 3, and to this end the posts carry rows of holes or have T-shaped grooves for inserting threaded parts.

The four parallel posts 3 of equal length extend between the plinth 1 and the cover plate 2 and have four securing bores 5 at their two end faces. The lower plinth 1 and the upper cover plate 2 carry groups of securing holes 6. The plinth 1 and the cover plate 2 are rigidly secured with the four posts 3 by way of securing screws 7 which pass through the securing holes 6 of the plinth 1 and the cover plate 2 and engage in the securing bores 5 of the posts.

The plinth 1 and the cover plate 2 are each formed by a securing plate 8 with an essentially rectangular contour which carries groups of securing holes 6. The arrangement of the securing holes is such that the four posts can be secured to the plinth 1 and the cover plate 2 corresponding to the width and depth of the standardised sub-racks to be inserted.

At one (frontal) longitudinal side 9 of the plinth 1 and the cover plate 2 (or the securing plate 8) two front arms 10 project perpendicularly forwardly and the opposite (rear) longitudinal side 11 two (rear) flanges arms forwardly, perpendicularly to the longitudinal side 11. Both the two front arms 10 as well as the two rear arms 12 are so formed on the ends of longitudinal sides 9 and 11 of the securing plate 8 that a front arm 10 and a rear arm 12 are always aligned together and between them a front recess 10' or a rear recess 12' is formed. The plinth 1 and the cover plate 2 together with their respective four arms 10 and 12 display a contour which can be compared to a broad "H".

The plinth 1 and cover plate 2 have a respective peripherally extending marginal ledge 13 which is of equal height throughout and which is formed perpendicularly at the two longitudinal sides 9 and 11 as well as on all sides of the four arms 10 and 12. The plinth 1 and the cover plate 2 are formed as thin-walled members and represent downwardly and upwardly open, low H-shaped troughs. Stiffening ribs (not visible) are disposed within the troughs.

In place of the four posts 3, two parallel side walls 3' may also be provided between the plinth and cover plate 2 which in side elevation are longitudinally rectangular and stand opposite each other at a spacing from the components to be mounted, as is shown in Figure 2. These side walls 3' are formed as hollow profiles.

Both the plinth 1 and the cover plate 2 have a circular ventilation opening 14. In addition, on their narrower sides 15 the plinth 1 and cover plate 2 carry edge recesses 16 of rectangular contour. The outer sides 17 of the flanges 10 and 12 are in register with these narrower sides 15.

The two front arms 10 of the plinth 1 and cover plate 2 are shorter than the two rear arms 12.

Figure 3 represents an appliance cabinet for mounting sub-racks and other electrical and electronic components, the cabinet having a rack according to Figure 1 as the carrier element. The enclosure panels of this appliance cabinet, namely the side panel 18, the floor panel 19, the cover panel 20, the rear wall 21 as well as the door 22 are butted directly to the marginal ledges 13 of the plinth 1 and the cover plate 2, namely are secured or butted to their front and rear arms 10 and 12 or to their narrow sides 15. In this way wide recesses 10' and 12' are formed between the front and rear arms 10 and 12 as well as at the plinth 1 and the cover plate 2 which recesses together with the edge recesses 16, permit an unhinded introduction and laying out arrangement of very extensive cable harnesses from below, from above and from two sides to the sub-assemblies and components.

In the attached claims reference numbers have been used purely to facilitate comprehension but absolutely no limitation of scope is intended thereby.

There now follows a list of reference numbers and the associated components.

List of Reference Numbers

1	Plinth
2	Cover Plate
3	Post
4	End faces (of 3)
5	Securing bores
6	Securing holes (in 1 and 2)
7	Securing screws
8	Securing plate
9	Longitudinal side (front)
10	(Front) arm
11	Longitudinal side (rear)
12	(Rear) arm
10'	(Front) recess
12'	(Rear) recess
13	Marginal ledge
3'	Carrier walls
14	Ventilation opening
15	Narrow sides
16	Edge recesses
17	Outer sides
18	Side panels
19	Floor panel
20	Cover panel
21	Rear wall
22	Door

Claims

1. A mounting frame for an appliance cabinet, the cabinet serving for mounting sub-racks of the electronics industry and provided with enclosure panels, the frame having the following features:

- a lower plinth (1),
- an upper cover plate (2),
- parallel posts (3) of equal length which extend between the plinth (1) and the cover plate (2),
- the frontal surfaces (4) of the posts (3) on two sides have securing bores (5),
- the plinth (1) and the cover plate (2) carry groups of securing holes (6),
- the plinth (1) and the cover plate (2) are rigidly connected with the posts by means of securing screws (7) which project through the securing holes (6) and engage in the securing bores (5),
- the plinth (1) and the cover plate (2) are formed essentially of a securing plate (8) having a rectangular contour which carries the groups of securing holes (6),
- on one of the longitudinal sides (9) of the plinth (1) and of the cover plate (2) two front arms (10) project perpendicularly forwardly and form a front recess (10) between themselves,
- at the opposite longitudinal sides (11) of the plinth (1) and of the cover plate (2) two rear arms (12) project perpendicularly out and form a rear recess (12') between themselves,
- the front and rear arms (10 and 12) are formed on the ends of the longitudinal sides (9 and 11),
- each of a front and a rear flange (10 or 12) are aligned with each other.

2. A mounting frame according to claim 1, characterised in that four profiled rails serve as posts (3).

3. A mounting frame according to claim 1, characterised in that two mutually oppositely standing carrier walls (3') of longitudinally rectangular side elevation serve as the posts (3).

4. A mounting frame according to any one of claims 1 to 3, characterised in that two securing ~~walls~~ bores (5) lying next to each other are provided at each end face (4) of the posts (3 or 3').

5. A mounting frame according to any one of claims 1 to 4 characterised in that the securing ~~walls~~ bores (5) are provided with internal threading for the securing screws (7).

6. A mounting frame according to one of claims 1 to 5, characterised in that the plinth (1) and the cover plate (2) are provided with a respective ventilation opening (14).

7. A mounting frame according to any one of claims 1 to 6, characterised in that the plinth and the cover plate have edge recesses (16) on their narrow sides (15).

8. A mounting frame according to claim 7, characterised in that the outer sides (17) of the front and rear arms (10 and 12) are aligned with the narrow sides (15) of the plinth (1) and the cover plate (2).

9. A mounting frame according to any one of claims 1 to 8, characterised in that the plinth (1) and the cover plate (2) are each made of a one-piece ~~and consist of~~ aluminium die casting.

10. A mounting frame according to any one of claims 1 to 9, characterised in that the front arms (10) are formed shorter than the rear arms (12).

11. A mounting frame according to any one of claims 1 to 10, characterised in that the plinth (10) and the cover plate (12) are formed identically.

12. A mounting frame according to any one of claims 1 to 11, characterised in that the plinth (1) and the cover plate (2) have a circumferentially extending marginal ledge (13).

13. A mounting frame according to claim 12 characterised in that the marginal ledge (13) is formed with the same height throughout and is mounted essentially perpendicularly.

14. A mounting frame according to any one of claims 1 to 13, characterised in that the enclosure panels of the appliance cabinet in the form of side enclosure panels (18), floor enclosure panel (19), cover enclosure panel (20), rear wall (21) and door (22) are butted to the plinth (1) and to the cover plate (2).

15. A mounting frame substantially as herein described with reference to and as shown in the accompanying drawings.